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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,577	02/09/2004	Jennifer A. Coggan	8650.027 US	9765

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EXAMINER	
GARRETT, DAWN L	

ART UNIT	PAPER NUMBER
1786	

MAIL DATE	DELIVERY MODE
05/04/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/774,577	COGGAN ET AL.	
	Examiner	Art Unit	
	Dawn Garrett	1786	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *10-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 14-16* is/are rejected.

7)☒ Claim(s) *13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 21, 2011 has been entered.

2. The amendment received March 21, 2011 has been entered. Claims 1 and 14 were amended.

3. The previous species under consideration in the last Office action is the following:

A 1,1'-binaphthyl derivative comprising hydrogen substituents (i.e., a compound according to Formula I of claim 1 wherein R1 and R2 are hydrogen and R2 and R3 are hydrogen).

Applicant has deleted hydrogen as a possibility for R2 and R3. Accordingly, the previous species is not longer present and the examiner has selected a next species for consideration.

4. The current species under consideration is the following:

A 1,1'-binaphthyl derivative according to Formula I wherein R1 and R4 are hydrogen and R2 and R3 are an aryl or substituted aryl with about 6 to about 30 carbon atoms. Claims 1-9 and 13-16 read upon this species. Claims 10-12 are withdrawn as non-elected with respect to the current species under consideration.

5. The rejection of claims 1-3, 5-7, 14, and 15 under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1) as set forth in the Office action mailed 12/21/2010 regarding the last considered species is withdrawn due to the cancellation of the species that was under consideration and addressed in the last Office action.

6. The rejection of claims 3 and 4 under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1) in view of Sato et al. (JP 11-302639 A) as set forth in the Office action mailed 12/21/2010 is withdrawn due to the cancellation of the species under consideration.

7. The rejection of claim 16 under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1) in view of Suzurisato et al. (JP 2002-324676) as set forth in the Office action mailed 12/21/2010 is withdrawn due to the cancellation of the species under consideration.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

> Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

9. Claim 9 is rejected under 35 U.S.C. 112, fourth paragraph, as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 9 sets forth substituent groups for R5 and R6 that are not within the definition of R5 and R6 groups recited in independent claim 8. Claim 8 does not describe vinyl groups for R5

and R6. Accordingly, the recitation of phenylvinyl and diphenylvinyl in claim 9 is outside of the scope of claim 8.

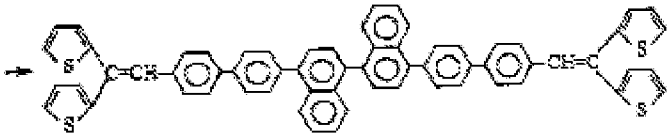
Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

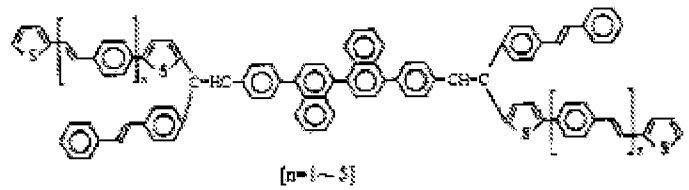
> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-8, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Azuma et al. (JP 2000-053677).

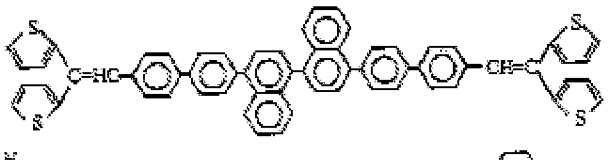
Azuma et al. discloses aromatic compounds according to general formula (1) for an electroluminescent device (see abstract). Azuma et al. exemplifies the following compounds of formula 1:



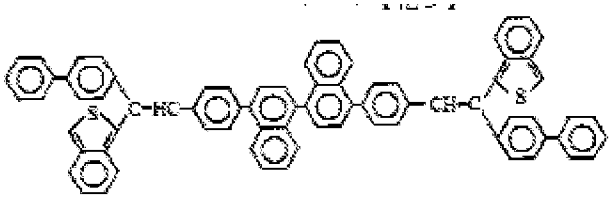
(4) (see par. 57)



(see par. 17)



(see par. 16)



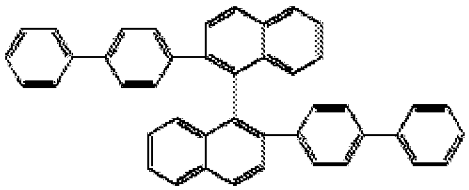
(see par. 16)

The above compounds read upon instant formula I where R2 and R3 are substituted aryl groups, since the above compounds have substituted phenyl groups (phenyl group = 6 carbon atoms per the requirement of an aryl with about 6 to about 30 carbon atoms). The above compounds read upon instant formula II where R5 and R6 are substituted aryl and R2 and R3 are hydrogen.

The formula 1 compounds shown above are preferably used in the luminous layer. Further fluorescent material is used in the luminous layer (see par. 28-29). The amound is 01. to 20 by weight of fluorescent material (see par. 34). The devices comprise a hole transport layer and an electron transport layer also (see par. 25).

12. Claims 1-3, 5-7, 14 and 15 arerejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. (US 2004/0106003 A1).

Chen et al. teaches EL devices comprising a binaphthalene derivative in an emissive layer and/or one or more of the charge transport layers or as a host or dopant material for one of these layers (see abstract). Chen et al. exemplifies the following compound:



(see par. 44, page 4 and par. 48-49, page 5). The compound (3) is used in an OLED device (see par. 45).

The device may comprise the binaphthalene derivative as a host together with a functional light emitting dopant in an emissive layer per instant claims 2, 3, 14, and 15 (see claim 3, page 6). The binaphthyl compound is in a layer of the device per instant claims 5 and 7 (see claims 1, 4 and 8 on pages 5 and 6). The compound may be part of a hole transport layer per instant claims 6 and 14 (see claims 8 and 12 on page 6). Electron transporting material is included in the device per claims 6 and 14 (see par. 35 and par. 48-51). Per instant claim 14, an emissive layer and at least one charge transporting layer, which includes an electron transport layer and hole transport layer is included (see claim 8, 11 and 12 on page 6).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1) in view of Sato et al. (JP 11-302639 A). Chen et al. is relied upon as set forth above for the rejection of claims 1 and 2.

Chen et al. teaches the use of binaphthylene derivatives as host material together with a light emitting dopant in an emissive layer of an EL device. Chen et al. is silent with respect to the amount of dopant dispersed in the host material. Sato et al. teaches in analogous art the use of 0.1 to 10% by weight of a dopant (see par. 43). Regarding claim 3, in the alternative that Chen et al. does not specifically teach a dopant having the bandgap property of claim 3, Sato et al. teaches a suitable dopant for an emissive layer is perylene, which is the same as a specifically named dopant in the instant specification (see par. 43). It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed an emissive layer comprising 0.1 to 10 % by weight of a dopant material such as perylene, because one would expect to achieve a functional light emitting layer for an EL device.

15. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1) in view of Suzurisato et al. (JP 2002-324676). Chen et al. is relied upon as set forth above for the rejection of claim 14.

Chen et al. is silent with respect to the specific features (i.e., specific materials of functional layers and /or thickness) of a device per claim 16, but does teach functional multi-layers for forming the light emitting device (see claims 8-12 on page 6). Suzurisato et al. teaches, in analogous art, an EL device having an anode, hole injection layer, hole transportation layer, luminous layer, electron transportation layer, electron injection layer and cathode layer

(see par. 159). With regard to claim 16, an indium tin oxide anode can be formed at a thickness of 200nm (see par. 169), the hole injection layer may be formed of copper phthalocyanine (see par. 54) and the buffer layers (the hole injection layer as named by Suzurisato et al.) may be in a thickness of 0.1 to 100 nm (see par. 56), the hole transportation layer is formed of a tertiary amine (see par. 65) and is formed in a thickness of 5nm-5 micrometers (see par. 84), the thickness of the luminous layer is 5 nm to 5 micrometers (see par. 119), the cathode may comprise a magnesium and silver alloy of 200 nm thickness (see par. 170). It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the Chen et al. device having EL device functional layers as taught by Suzurisato et al. and to have expected the predictable result of light emission from the device, because one would expect the layers taught by Suzurisato et al. to provide the needed functions for an EL device to efficiently emit light.

16. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma et al. (JP 2000-053677) in view of Suzurisato et al. (JP 2002-324676). Azuma et al. is relied upon as set forth above for the rejection of claim 14.

Azuma et al. is silent with respect to the specific features (i.e., specific materials of functional layers and /or thickness) of a device per claim 16, but does teach functional multi-layers for forming the light emitting device (see par. 35-37 and par. 25). Suzurisato et al. teaches, in analogous art, an EL device having an anode, hole injection layer, hole transportation layer, luminous layer, electron transportation layer, electron injection layer and cathode layer (see par. 159). With regard to claim 16, an indium tin oxide anode can be formed at a thickness of 200nm

(see par. 169), the hole injection layer may be formed of copper phthalocyanine (see par. 54) and the buffer layers (the hole injection layer as named by Suzurisato et al.) may be in a thickness of 0.1 to 100 nm (see par. 56), the hole transportation layer is formed of a tertiary amine (see par. 65) and is formed in a thickness of 5nm-5 micrometers (see par. 84), the thickness of the luminous layer is 5 nm to 5 micrometers (see par. 119), the cathode may comprise a magnesium and silver alloy of 200 nm thickness (see par. 170). It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the Azuma et al. device having EL device functional layers as taught by Suzurisato et al. and to have expected the predictable result of light emission from the device, because one would expect the layers taught by Suzurisato et al. to provide the needed functions for an EL device to efficiently emit light.

Allowable Subject Matter

17. Regarding the current species under consideration:

Where compounds of claim 9 comprise specifically in the R5 and R6 positions of Formula II the recited unsubstituted aryl groups phenyl, tolyl, naphthyl, anthryl, phenylanthryl, diphenylanthryl, or biphenylyl and comprise only hydrogen for the remainder of the Formula II substituents, the specific compounds of Formula II are considered to comprise allowable subject matter.

Regarding claim 13, specific compounds that are recited within claim 13 according to the current species (all listed compounds except the last two listed compounds of claim 13) are considered to comprise allowable subject matter.

Claims 9 and 13 are indicated as objected to at this time and not allowed, because they are not directed solely to the species under consideration and to the indicated allowable subject matter.

18. Allowable subject matter has been previously discussed in the prior office actions based upon previously considered species; please see prior Office actions. No claims are directed solely to those allowable species, so no claims are currently indicated as allowed.

Response to Arguments

19. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571) 272-1523. The examiner can normally be reached Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Chriss can be reached on (571) 272-7783. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dawn L. Garrett/
Primary Examiner, Art Unit 1786

April 27, 2011